STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Scott M. Matheson, Governor
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4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

August 3, 1984

Mr. Bob Roggenthen
Western States Minerals Corporation
4975 Van Gordon Street
Wheatridge, Colorado 80033

EXP/003/004

Dear Mr. Roggenthen:

RE: Permit Review Noranda - Tecoma Project, ACT/003/007, Box Elder County, Utah

The Division has reviewed the Mining and Reclamation Plan submitted by Western States Minerals Corporation for the Noranda-Tecoma Project to determine compliance with the Utah Mined Land Reclamataion Act of 1975, Title 40-8, Utah Code Annotated 1953, and the rules and regulations of same.

During the review, certain necessary information was found to be lacking. The additional information that is needed to complete the review is detailed in the attached document. When the additional information has been received the total plan will be assessed for compliance with the regulations. Please use the rule numbers as referenced in this doument to organize your response. They refer to rules in the Mined Land Reclamation Act.

I am also enclosing four (4) copies of the Act, as per your request. Please contact me if you have questions, or would like to meet with the review staff.

Sincerely,

for

Susan C. Linner
Reclamation Biologist/
Permit Supervisor

SCL/jvb
Enclosures
cc: Jim Smith, DOGM
Dave Darby, DOGM
Pam Grubaugh-Littig, DOGM
Lynn Kunzler, DOGM
Tom Portle, DOGM
90350-8

MRP REVIEW
Noranda Exploration, Inc.
Tecoma Project

ACT/003/007
Box Elder County, Utah

August 3, 1984

Rule M-3(1)(e) - DD

The applicant should show on a map the direction of flow of all surface water as well as all ditches, berms and ponds which control it.

The applicant has not clearly demonstrated how runoff will be controlled from the Waste Rock Dump. Please explain.

Rule M-3(2)(b) - SCL

The application indicates that access roads may be left after mining ceases (MR-1 Form #23D). A written request from the landowner must be received before the Division can grant a variance to road reclamtion. If no written request is received, all roads on the mine site will be bonded for reclamation.

Rule M-3 (2)(c)(2) - DD

Please submit a copy of the liner system (p. 19) that was furnished to the Bureau of Water Pollution Control.

Does the applicant have plans to install a septic system? If so, where, and has the applicant contacted the Department of State Health to review those plans?

Plans for the design and sizing of the barren and pregnant ponds should be submitted to the Division. The sizing of the ponds should be such that they would totally contain (with sufficient freeboard) the maximum volume of leachate in circulation at one time plus any runoff that is planned to be stored in the ponds during the 10-year, 24-hour precipitation event.

Have the designs for the barren and pregnant ponds been sent to State Health for their review?

Rule M-3(2)(e) - SCL

Form MR-1, #25B indicates that reclaimed areas will be fenced. The fencing design must be approved by the Division prior to implementation. Please provide designs.

Rule M-3(2)(e) - LK

The final pit should be reclaimed and the highwall reduced by returning "spoil" material. Please provide commitment and designs.

Rule M-3(5) - DD

The applicants should file an MR-9 form to delineate the status of wells drilled since 1982.

Bonding Questions

MR-5

The costs outlined in Table 4 need more detail. The unit costs need to be included (i.e., cubic yards, etc.) and should be more than simply costs per acre. Please cite cost references used, (i.e., Rental Rate Bluebook, Cat Performance Handbook, Means, Dodge).

What form of surety is proposed?

Rule M-10(6) Toxic Materials - TLP

In Section 1.0 of the "Technical Memorandum, Reclamation Plan," the applicant alludes to detoxification of spent heaps before regrading, while detoxification of the leach pads per se is mentioned in Section 2.4.

What procedure(s) will be employed to effect detoxification?

Is this portion of the plan approved by the Department of Health?

Why is the anticipated cost of this procedure not included in the bond estimate under letter D?

What is to be the fate of leached ore during and after operations?

From Table 1 and from the Geology Appendix, it is evident that arsenic levels are extremely high and could present a potential hazard to plant growth. Soil and plant tissue levels of arsenic should be monitored during the course of mine operations. Please propose a plan to do so.

Elements which may be toxic in alkaline environments such as boran, molybdenum and selenium are not included in Table 1. These data must be submitted if available, or acquired if not. Please consult with the Division prior to performing any sampling or analysis.

Rule M-10(11) - DD

Cross-sections and map locations should be submitted for all culverts, diversion ditches and riprap areas where velocities will exceed five (5) feet per second.

Rule M-10(12) - LK

Since big sagebrush is an important component of sagegrouse, antelope and deer habitat, the reclamation plan should include this species at a rate of 0.1 pound pure live seed per acre.

The revegetation monitoring plan should include provisions for evaluation of reclamation success at the end of the 3rd year.

Rule M-10(14) Soils - TLP

Removal

The applicant indicates in Section 2.2 of the "Technical Memorandum" that the amount of strippable topsoil "will be verified this spring." The supplement received on June 12 describes the area in the draw but does not explain methods used to arrive at the figure presented. Further, it does not verify depths in either the leach pad or overburden dump areas or provide methods for estimation. In 23C, it is stated that 20 inches was the cutoff depth for alluvial soils in the draw where soil may exceed six feet in depth. Please explain.

It appears that the applicant intends to sacrifice soil from the open-pit area since "soils on the minesite are unsuitable due to shallowness" (Section 3). Based on the Division field tour observations, cuts in this area showed that a six-inch topsoil horizon (below the desert pavement) was available while subsoils were often found to a 20-inch depth. This statement and the implied proposal for an exemption for soil removal in this area is unacceptable. The revised plan should reconcile this issue.

Why are data on organic matter,nitrogen, phosphorous and potassium omitted from the application? These data must be included.

What is a meg/l which appears in Table 1 in the soils section (5.0)?

The applicant should prepare a soil stripping map from available and forthcoming (if applicable) soils chemical data. From this map, more accurate acreage figures coupled with depth figures will allow soil volume determiations.

In accord with this procedure, the applicant should augment the statement that (due to soil texture variability and depth to durapan) "control will be maintained" (Section 2.0) during stripping operations. Please elaborate on such procedures.

Storage

Without knowing the soil volume associated with the project, it is not possible to assess the topsoil stockpile storage depth or the adequacy of the storage space allocation as depicted on the "General Facilities Layout" map. The expected volume for each stockpile depicted on the above-mentioned map must be provided.

The applicant indicates that annual rye and clover will be used to seed the stockpiles and that straw will be crimped into stockpile slopes. Please indicate the rate of straw application and implements to be employed in crimping. What is the expected time period between stockpiling and straw application?

The applicant should consider the use of the permanent seed mix for stockpile protection to afford a reservoir of seeds upon final reclamation. In any case, at least one perennial grass should be employed in seeding the stockpile. The Division has observed good success with Sitanion in the second season for similar environments.

Redistribution

The acreage to receive a given depth of topsoil upon redistribution and the expected volume of available topsoil is ambiguous. For example, in the supplement to the MR-1, it is stated that one to two feet of soil will be stripped while 18 inches is indicated in the "Technical Memorandum" (2.1), but in 23C (1) of the MR-1, replacement depth is cited as only six inches, Please clarify.

In areas which would appear to pose more difficult reclamation challenges, lesser amounts of topsoil redistribution are proposed (i.e., eight inches to one foot for the leach pads and six inches for the waste dump). Depths of replacement over potentially toxic and coarse materials must be reevaluated. If the average stripping depth is 18 inches, the allocation of soil as proposed above is difficult to understand. Please clarify.

Should the variance request for the open pit be denied, the applicant will need to reevaluate the acreage to be reclaimed. In any case, the applicant must clearly represent the volume of soil available, the acreage to receive topsoil, as well as the variability of replacement depths by specific area.

Miscellaneous Comments

Since this is a previously undisturbed area, the highwalls should be contoured to match the topography of the surrounding area. Slopes of the surrounding area generally do not exceed 21% (2 = 12°) whereas the highwalls proposed by the applicant are 64% (2 = 336°).

From MR-1, #17 is blank in the application. Duration of the mining operation must be known in order to set the surety bond. Please provide.

Technical Memorandum - Reclamation Plan, Table 1 shows only 25 of the 31 disturbed acres of the mine overburden dump being reclaimed. Please explain this discrepancy.

The applicant must show that water rights have been applied for in the appropriate amount (450 - 900 gpm).

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